STORM REPORT FROM WEEKEND OF JAN 14 TO 17

MLK WEEKEND

VINCE MURPHY - UPDATE ON FLOODING

MORGAN SAYLE - UPDATE ON EROSION AND EROSION MONITORING PROJECT

NOAA records 1.01 inches of precipitation at Nantucket Memorial Airport on Jan 17

High tide was at 11.40am on Jan 17, and this is the time of these pictures

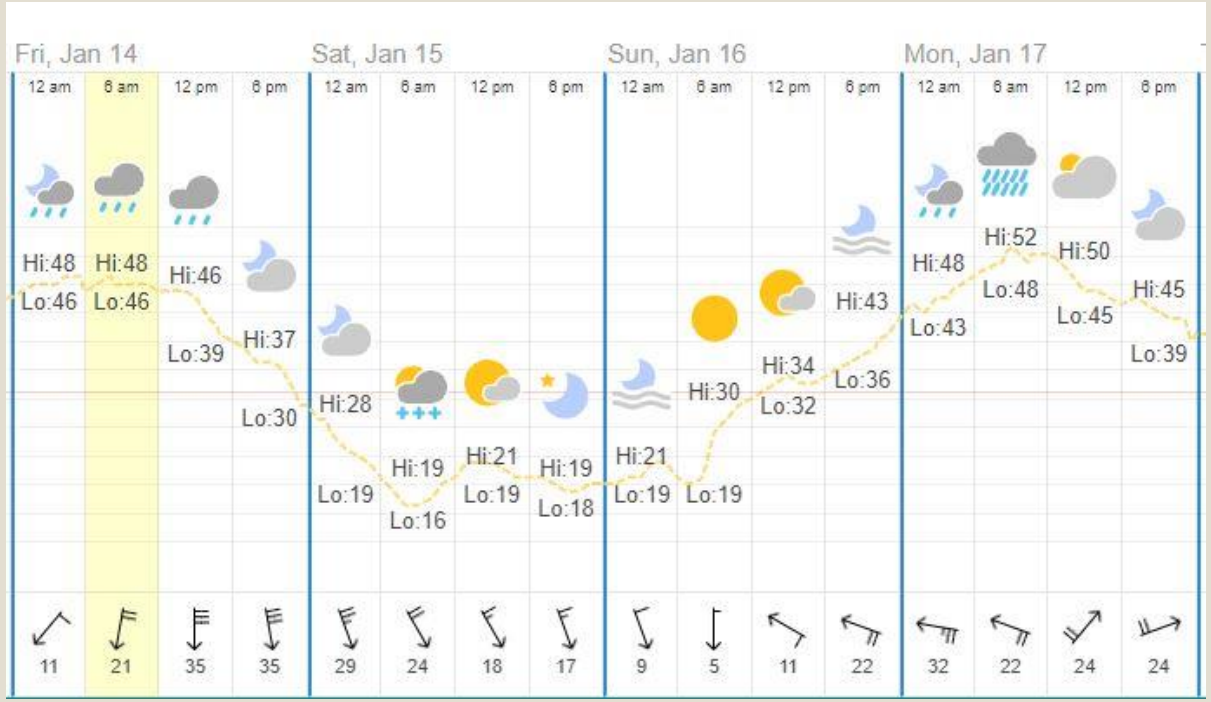
At least two tidelines. Looks like water levels were higher during the peak of the storm around 9am

Looks like it was mostly surface water from the storm and not salt water from the harbor.

At high tide, flow through the duckbills was observed, indicating enough water pressure to release flooding to the harbor through storm drains.

Did not measure salinity of water on street to confirm.

- Most erosion impacts from the recent storm spanning approx. 14th – 17th were noticed on the south shore
- Heaviest erosion appeared to have occurred from around mid-island → west
- Noticed significant erosion in a few areas, namely around the sewer beds – numbers determined through the use of erosion monitoring “stations”



Fun Photos – Madaket Beach

1/13/22

1/19/22

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- Three permanent erosion monitoring stations were established at several different locations along the south shore of the island – end of Nonantum Ave, vicinity of TON Sewer beds, Tom Nevers Field.
- The purpose of these stations is to provide a greater understanding of island erosion rates, especially around important infrastructure (roads, recreation, waste treatment).
- Measurements are undertaken as often as can be managed, usually on a monthly basis and after strong storms (like recently) with high winds.
- Consists of a series of stakes placed at varying intervals (generally 20ft) that provide a point to the bank to measure from.
- Greatest change occurred at the Sewer beds, so that is what we'll be focusing on today

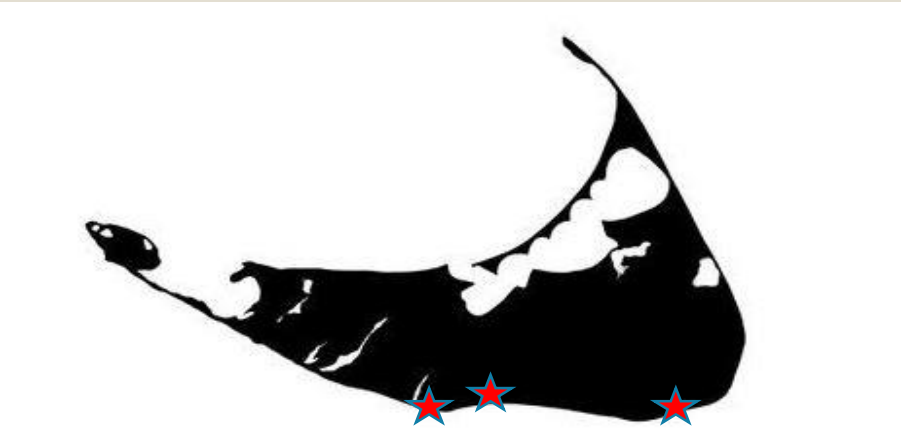

Fig. 4 – Overview of sewer treatment facility coastline with approximate locations of each monitoring station.

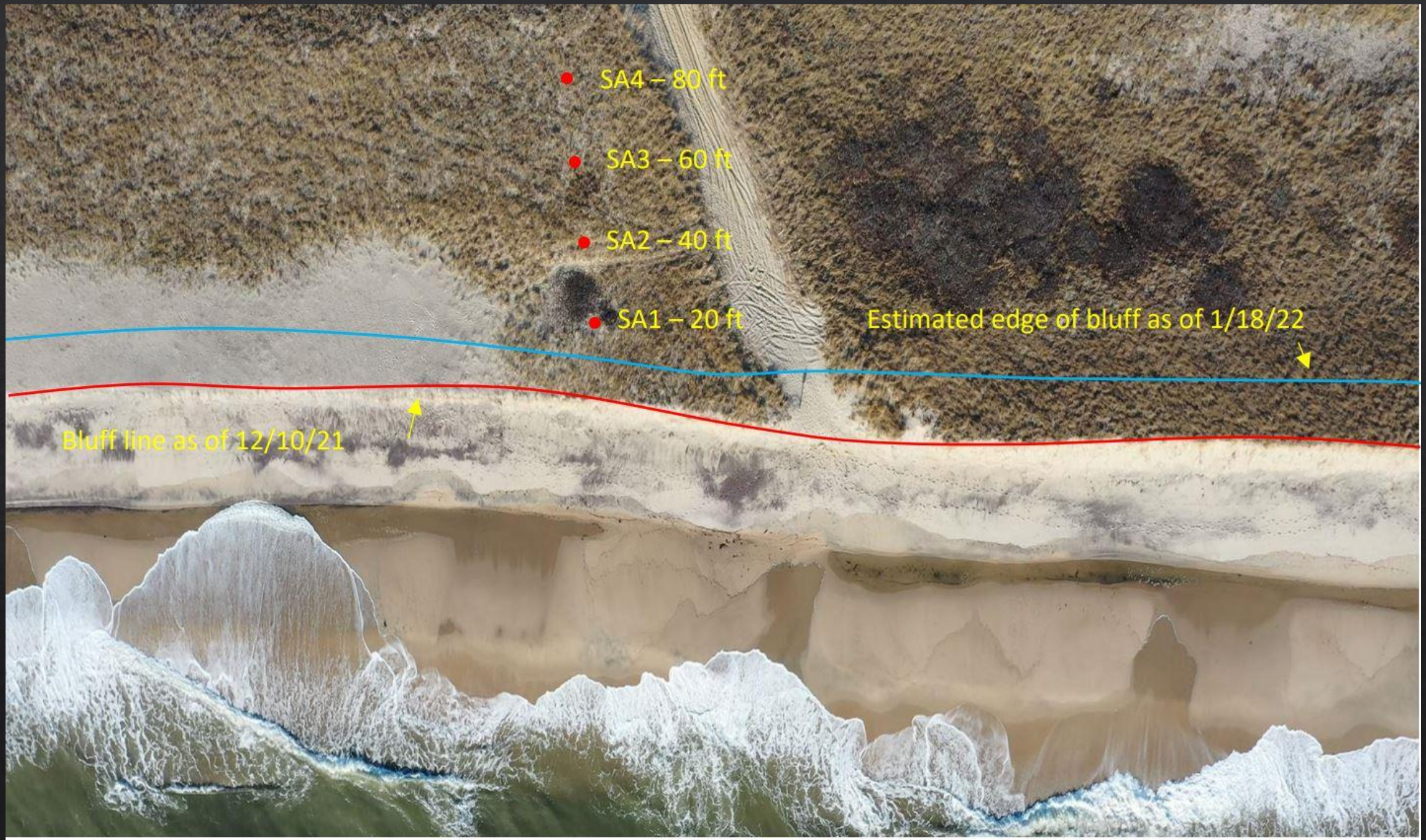

Fig. 1 – Station SA1, SA2, SA3, SA4.

This area of the south shore has been observed to be one of the more rapidly eroding areas of the island, with impacts to the shoreline being seen as a result of a wide range of weather events.

Station SA consists of 4 posts spaced 20ft apart – extra posts added for redundancy, in case one was lost or vandalized, etc.

Table 1. SA distance to bluff in feet

Date	Sewer A1	Sewer A2	Sewer A3	Sewer A4	Change
12/8/21	20	40	60	80	0
1/7/22	20	40	60	80	0
1/18/22 *	10	30	50	70	-10

** Measured after storm event*

No change throughout December into January, then 10ft lost – presumably over the course of the weekend

Fig. 2 – Station SB1, SB2, SB3. SB1 was lost to erosion.

Station SB consists of 3 posts spaced 20ft and 80ft apart to avoid vandalism or destruction from road – extra posts added for redundancy, in case one was lost or vandalized, etc.
At the time of installation the distance from the coastal bank to the fence-line surrounding the treatment facility was 135 feet. This has been reduced to 113 feet following these episodes of storms and wind throughout January.
Word is that SB2 has also been lost since last measurement.

Table 2. SB distance to bluff in feet

Date	Sewer B1	Sewer B2	Sewer B3	Change
12/8/21	20	40	120	0
1/7/22	16	36	116	-4
1/18/22 *	Gone	18	98	-18

**Measured after storm event*

Some change early Jan. after windy weather earlier in the month, then 18ft lost – presumably over the course of the weekend. Cumulative total of 22ft lost so far in January.

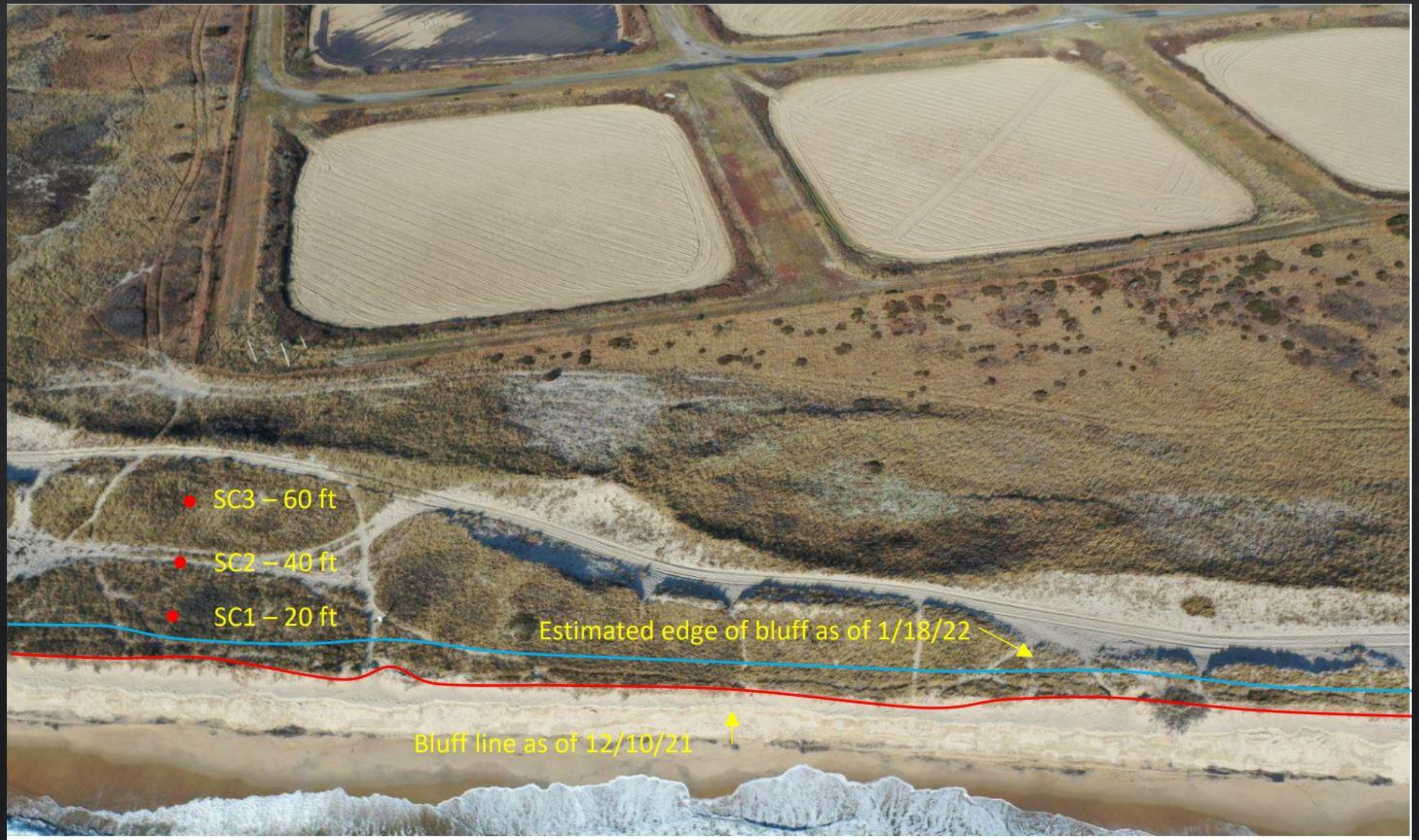

Fig. 3 – Station SC1, SC2, SC3.

Station SC consists of 3 posts spaced 20ft apart – extra posts added for redundancy, in case one was lost or vandalized, etc.

Table 3. SC distance to bluff in feet

Date	Sewer C1	Sewer C2	Sewer C3	Change
12/8/21	20	40	60	0
1/7/22	20	40	60	0
1/18/22 *	8	28	48	-12

**Measured after storm event*

No change throughout December into January, then 10ft lost – presumably over the course of the weekend

Hope to establish a few more monitoring stations in other spots on the island, and will continue to build up profiles on different areas throughout the seasons.